

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 46 (Currently Amended): A computer-implemented method for utilizing augmented reality (AR) technology to combine real and virtual worlds together to provide an interface for a user to sense and interact with virtual objects in the real world, the method ~~producing an augmented reality video~~ comprising:

providing video data comprising images of a moving model plane having markers, said markers for calibrating a camera to track the motion of the model plane;

~~— providing a three-dimensional image data model of a product;~~

determining a pose of the moving model plane according to the markers in the video data and calibration results;

creating a three dimensional image data model of a product in a pose corresponding to the pose of the moving model plane, wherein the orientation of the markers determines the orientation of the three dimensional image data model;

determining an image correspondence between the camera calibration results associated with the moving model plane ~~having markers~~ and the three-dimensional image data model;

rendering a 3D model of the product based on the image correspondence;
and

~~producing the~~ generating an augmented reality video by superimposing ~~rendering the rendered 3D model~~ three-dimensional image data model of the product ~~superimposed~~ on the moving model plane in the video data.

Claim 47 (Canceled).

Claim 48 (Previously Presented): The computer-implemented method of claim 46, further comprising scaling the three-dimensional image data model to the model plane according to the markers.

Claim 49 (Canceled).

Claim 50 (Previously Presented) The computer-implemented method of claim 46, further comprising encoding hyperlink information into the augmented reality video, wherein the hyperlink information points to data corresponding to the product.

Claim 51 (Previously Presented) The computer-implemented method of claim 50, wherein encoded hyperlink information is activated by selecting a rendering of the three-dimensional image data model from the augmented reality video.

Claim 52 (Previously Presented) The computer-implemented method of claim 46, wherein the video data includes images of a human manipulating the pose of the model plane, wherein a rendering of the three-dimensional image data model is manipulated according to the pose of the model plane.

Claim 53 (Previously Presented) The computer-implemented method of claim 46 wherein the augmented reality video is produced in real time.

Claim 54 (Currently Amended) A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for utilizing augmented reality (AR) technology to combine real and virtual worlds together to provide an interface for a user to sense and interact with virtual objects in the real world, the method producing an augmented reality video, the method steps comprising:

providing video data comprising images of a moving model plane having markers, said markers for calibrating a camera to track the motion of the model plane;

~~—providing a three-dimensional image data model of a product;~~

determining a pose of the moving model plane according to the markers in the video data and calibration results;

creating a three dimensional image data model of a product in a pose corresponding to the pose of the moving model plane, wherein the orientation of the markers determines the orientation of the three dimensional image data model;;

determining an image correspondence between the camera calibration results associated with the moving model plane ~~having markers~~ and the three-dimensional image data model;

rendering a 3D model of the product based on the image correspondence;
and

generating an ~~producing the~~ augmented reality video by superimposing ~~rendering the rendered 3D model~~ ~~three-dimensional image data model~~ of the product ~~superimposed~~ on the moving model plane in the video data.

Claim 55 (Canceled).

Claim 56 (Previously Presented): The machine to perform method of claim 54, further comprising scaling the three-dimensional image data model to the model plane according to the markers.

Claim 57 (Canceled).

Claim 58 (Previously Presented): The machine to perform method of claim 54, further comprising encoding hyperlink information into the augmented reality

video, wherein the hyperlink information points to data corresponding to the product.

Claim 59 (Previously Presented): The machine to perform method of claim 58, wherein encoded hyperlink information is activated by selecting a rendering of the three-dimensional image data model from the augmented reality video.

Claim 60 (Previously Presented): The machine to perform method of claim 54, wherein the video data includes images of a human manipulating the pose of the model plane, wherein a rendering of the three-dimensional image data model is manipulated according to the pose of the model plane.

Claim 61 (Previously Presented): A computer-implemented method for producing an augmented reality video comprising:

- providing video data comprising images of a moving model plane having a marker, wherein the model plane is a substantially rectangular plane and the marker is a graphic disposed on an upper surface thereof;

- providing a three-dimensional image data model of a product;

- determining a pose of the moving model plane according to the markers in the video data;

- determining an image correspondence between the moving model plane having markers and the three-dimensional image data model;

- producing the augmented reality video by rendering the three-dimensional image data model of the product superimposed on the moving model plane in the video data, wherein a rendering of the three-dimensional image data model has substantially the pose of the moving model plane.

Claim 62 (Previously Presented): A computer-implemented method for producing an augmented reality video comprising:

providing video data comprising images of a moving model plane having a marker, wherein the model plane is a substantially rectangular plane and the marker is a graphic disposed on an upper surface thereof;

providing a three dimensional image data model of a product, wherein the three-dimensional image data model is an animation;

determining a pose of the moving model plane according to the markers in the video data;

determining an image correspondence between the moving model plane having markers and the three-dimensional image data model;

producing the augmented reality video by rendering the three-dimensional image data model of the product superimposed on the moving model plane in the video data, wherein a rendering of the three dimensional image data model has substantially the pose of the moving model plane;

encoding hyperlink information into the augmented reality video, wherein the hyperlink information points to data corresponding to the product, wherein encoded hyperlink information is activated by selecting the rendering of the three-dimensional image data model from the augmented reality video;

converting the augmented reality video into a streaming video format; and

streaming the augmented reality video having the streaming video format over a communications network to a computer for displaying the augmented reality video.